

REMARKS

Status of the Claims

- Claims 1-10 and 12-17 are pending in the Application after entry of this amendment.
- Claims 1-10, and 12-17 are rejected by the Examiner.
- Claims 1, 7, and 12 are amended.

Telephone Interview

Applicant thanks the Examiner for granting a telephone interview on August 8, 2007. During that interview, the difference between a physical element and a logical element was discussed. The difference is recited below as a response to the 35 USC §112 response. Also discussed was the difference between a metadata catalog and a storage device as presented in Courter. The Examiner agreed that a metadata catalog is not the same as the Courter storage device. The Examiner requested that Applicant's representative be available if additional questions arise. Applicant's representative agreed and encourages such communications.

Claim Rejections Pursuant to 35 U.S.C. §112

Claims 1, 7, and 12 stand rejected under 35 USC §112, second paragraph as being indefinite. The Office Action dated 6/4/7 states that it is unclear what is the difference between logical elements and physical elements. Specifically, the Office Action indicates logical elements include indexes and physical elements include b-trees, and that b-trees are is type of index.

Applicant respectfully submits that an index table can be partitioned into a plurality of b-trees as is well known in the art. B-trees can include physical pages (i.e. bytes) which are not logical elements of a table. Thus, b-trees are included as a physical element and not as a logical one.

Another way to understand the difference between logical element and physical elements is that logical elements are linked to each other in a logically meaningful way. The physical elements are not. As is well known, an index may be composed of a single B-Tree or many B-Trees. The index "knows" that it is an ordering of the data in a table based on

particular named columns. The B-tree “knows” only that it contains rows that are ordered a specific way. The B-tree does not know its relation to any table, nor does it know its relation to other B-trees which may be in the same index. Thus, the b-tree is not logically linked to other elements. Thus, the b-tree is considered a physical element in the context of the present invention. An example use is provided in Figure 4 and its description of the as-filed application.

Given the above distinction between a logical element and a physical element, using a b-tree as an example, Applicant respectfully requests reconsideration and withdrawal of the 35 U.S.C. §112 rejection.

Claim Rejections Pursuant to 35 U.S.C. §103 (a)

Claims 1-10, and 12-17 stand rejected pursuant to 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,185,663 to Burke in view of U.S. Patent No. 6,119,128 to Courter. The Applicants respectfully traverse the rejection.

Applicant amends independent Claims 1, 7, and 12 to more clearly claim the invention. Specifically, the feature that the first recovery unit and the second recovery unit are part of a physical layer of the database is supported via as-filed Figure 4. In Figure 4 it is clear that the primary catalog is part of the logical organization of the database. The linking of the primary metadata catalog and the secondary metadata catalog correlates the logical layer to the physical recovery units is described in as-filed paragraph 0016. The feature that one recovery unit in the database may be recovered while a second recovery unit is being independently accessed in the database is supported by as-filed paragraph 0013.

Applicant notes that the Office Action dated 6/4/7, page 3 states that Burke teaches “linking the primary catalog to the secondary catalogs (see figure 1, characters 16a, 18, and 16c)”. Applicant notes that the amended claimed element is “linking the primary metadata catalog to the secondary metadata catalogs, the linking comprising a correlation of the logical layer with the physical layer”. Applicant takes notice that Burke fails to disclose any metadata catalogs. The “link” between 16a, 18, and 16c in Burke Figure 1 is a line on the

figure which connects transaction logs 16a and 16c to memory block 18. Burke makes no mention of metadata or metadata catalogs as recited in Claim 1.

Simply stated, Burke fails to teach a primary catalog or a secondary metadata catalog. This is amplified by the Office Action page 3 which states:

“Burke does not teach creating a primary catalog comprising metadata of logical elements creating a primary catalog comprising metadata of logical elements of the units, the primary catalog referencing the units;
creating two secondary catalogs, each secondary catalog corresponding to a respective unit and comprising metadata of physical elements for the respective unit; and
maintaining the secondary catalogs such that the first unit is recoverable independently from the second unit.”

Applicant agrees with the above statement from page three of the Office Action, but does not agree that Burke teaches “linking the primary catalog to the secondary catalogs”. Since Burke fails to teach a primary metadata catalog or secondary metadata catalogs as recited in amended Claim 1, then Burke cannot logically teach linking the primary metadata catalog to the secondary metadata catalogs because the primary and secondary metadata catalogs as recited in amended Claim 1 do not exist in Burke. Applicant respectfully suggests that Burke fails to contemplate catalogs, metadata for catalogs, or a link between metadata catalogs having the limitations recited in the amended pending claims. Courter does not cure the deficiency in teaching concerning metadata, metadata catalogs, or links between metadata catalogs that correlate logical layer and physical layers.

The Office Action on pages 3-4 indicates that Courter teaches a primary metadata catalog and a secondary metadata catalog in col. 1 lines 64 to 66. Yet, Courter actually teaches, at col. 1 lines 64-66, a primary storage device and a secondary storage device. Courter, at Figure 2, items 204 and 206 depicts secondary storage devices. The symbol used in Figure 2 of Courter indicates either a hard disk drive or a tape drive. (See Courter, col. 4, lines 61-67 and Figure 2).

One of the teachings of Courter is that a primary storage device and a secondary storage device are used as backups such that the primary storage device and the secondary

storage device have the same information via copying of table partitions from one device to another during a recovery. Courter teaches:

“The database may be stored on a primary data storage device, while the copies of the database partitions and indexes are stored on a secondary data storage device.”

(Courter col. 4 lines 39-43). and

“If recovery of the table partitions and partitioning indexes are required, the recovery system 122 of the present invention copies the table partitions and partitioning indexes from the secondary data storage device back to the database.” (Courter col. 4 lines 46-50).

Applicant notes that the primary metadata catalog and secondary metadata catalogs of amended Claim 1 do not recite that they contain copies of each other’s data. Thus, the hardware primary data storage device and the hardware secondary data storage device of Courter are structurally and functionally different than the software primary metadata catalog and the secondary metadata catalogs of amended Claim 1.

Applicant also notes that Courter does not teach any use of metadata. The subject of metadata is absent from the specification of Courter as it was from Burke. Thus, Courter cannot be used as a reference that specifically teaches creating a primary metadata catalog comprising metadata of logical elements of the recovery units as recited in amended Claim 1 because Courter fails to teach anything about metadata catalogs. Likewise, Applicant notes that Courter also fails to teach two secondary metadata catalogs where each secondary metadata catalog corresponds to a respective recovery unit, where each secondary metadata catalog comprises metadata of physical elements for the respective recovery unit as indicated in amended Claim 1.

Also, as is well known in the art, a catalog is a list. The Office Actions dated 12/1/2006 and 6/4/2007 both regard a “catalog” as the Courter computer data storage device, (i.e. a hard drive or tape drive as shown in Courter Figure 2) . Applicant respectfully submits that one of skill in the art would not misinterpret the well-known term “catalog” in the pending claims and the specification to mean a computer data storage device such as a hard drive or a tape drive. Applicant respectfully submits that the term catalog is not analogous to the Courter data storage device.

Also, as is the case in Burke, since a primary and two secondary metadata catalogs are not taught or suggested in Courter, then a linking of the primary metadata catalog to the secondary metadata catalogs cannot logically be found in the teachings of Courter. This may be especially true considering that the claimed term “metadata catalog” is well known not be the same as the Courter “data storage device”.

As an additional consequence of Burke and Courter failing to teach a primary and a secondary metadata catalog, with all of the limitations recited in amended Claim 1, then neither Burke nor Courter, considered either alone or combined, can teach or suggest maintaining the secondary metadata catalogs such that the first recovery unit is recoverable independently from the second recovery unit, such that recovery of the first recovery unit may occur while the second recovery unit in the same database is being accessed as recited in Claim 1.

Applicant respectfully submits that the teachings of Burke and Courter, considered separately or combined, fail to meaningfully teach the elements of amended Claim 1.

Whereas amended Claim 1 recites primary and secondary metadata catalogs (lists), the teachings of Burke and Courter are completely without such metadata catalogs. Whereas amended Claim 1 recites primary and secondary metadata catalogs, Courter teaches primary and secondary computer data storage devices, such as a hard drive or magnetic tape. Whereas amended Claim 1 recites the primary and secondary metadata catalogs containing specific metadata, Burke and Courter fail to teach any form of metadata. Whereas amended Claim 1 recites linking the primary metadata catalog to the secondary metadata catalogs where the linking comprises a correlation of the logical layer with the physical layer, neither Burke nor Courter can possibly teach a linking of metadata elements that neither discloses.

Since the combination of Burke and Courter fail to teach all of the elements of independent amended Claim 1, then Applicant respectfully submits that a prima facie case of obviousness has not been established according to 35 U.S.C. §103(a) and MPEP 2143.03 which requires that all claim elements be taught or suggested by the cited references. Also, as indicated in MPEP 2143.03, the dependent Claims 2-6, which depend from independent Claim 1 are likewise rendered non-obvious.

Since independent amended Claims 7 and 12 have similar elements not found in either Burke or Courter, these claims, and their respective dependent claims are also rendered

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non-obvious. Applicant thus respectfully requests withdrawal of the 35 U.S.C. §102(a) rejection of Claims 1-10, and 12-17 as these claims patentably define over the cited art because all elements are not found in the cited art.

Conclusion

Applicant respectfully requests reconsideration and withdrawal of the pending rejections. Applicant respectfully submits that the pending claims patentably define over the cited art for the reasons stated above. The Examiner is encouraged to contact the undersigned if any questions remain as to the distinctions made above or any other matter relating to the present Application. Otherwise, Applicant respectfully requests reconsideration and a Notice of Allowance for all pending claims.

Respectfully Submitted,

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